

REMARKS

Claims 1-31, 33-39, 41-44, and 46-48 are pending. Claims 1, 9, 20, 25, and 46 have been amended and claims 32, 40, and 45 have been canceled. Applicants respectfully submit that these amendments raise no new issues requiring further searching or consideration by the Examiner, as all the amendments are based on features previously considered and recited in dependent claims which have been canceled.

Reconsideration of the application is respectfully requested for the following reasons.

In the Final Office Action, the Examiner maintained the rejection of claims 1-30 under 35 U.S.C. § 102(b) for being anticipated by the Tobita patent, and then extended this rejection to the newly added claims. Applicants respectfully traverse this rejection for the following reasons.

Claim 1 has been amended to recite that “the body bias is generated to track changes in the supply voltage received by the first node.” The Tobita circuit does not perform this function.

The Tobita circuit includes a node 1 for receiving a supply voltage V_{cc} and a pair of transistors Q_1 and Q_2 . (See Figure 1). The transistors are switched by gate voltages V_3 and V_5 respectively. A node 2 between the transistors generates an output signal, V_0 , which serves as a reference voltage for an external circuit.

The Tobita patent does not disclose that output voltage V_0 is based on a variation in the supply voltage V_{cc} , or that this voltage tracks changes in the supply voltage received by node 1. On the contrary, Tobita expressly teaches away these features of the invention when it discloses that the output voltage V_0 at node 2 has no dependency on supply voltage V_{cc} applied to power supply node 1. See column 7, lines 47-51, and also claim 1 of the Tobita patent which recites a

voltage generating means that generates a constant reference voltage with no dependency upon the voltage at said first potential node to an output node.

In the Final Office Action, the Examiner stated “Equations 4-7 of Tobita make it clear that V_0 is a function of V_{cc} .” But this is not the case. As indicated at column 7, lines 47-51, V_0 is a function of the threshold voltages, V_{TP1} - V_{TP4} , of transistors Q_1 to Q_4 . These threshold voltages are not dependent upon a supply voltage, but rather are defined based on the structural properties of the transistors themselves. Equations 4-7, therefore, make clear that V_0 bears no relation to V_{cc} , and Tobita even goes one step further to expressly state that “ V_0 . . . has no dependency on supply voltage V_{cc} applied to the power supply node 1.” To take a position contrary to this statement would only contradict the clear teachings of the Tobita patent.

Without a dependency on the voltage at node 1, it is clear that output voltage V_0 at node 2 does not “track changes in the supply voltage received by the first node,” as recited in claim 1. Absent a disclosure of these features, it is respectfully submitted that the Tobita patent cannot anticipate claim 1 or any of its dependent claims.

Claim 9 recites “wherein the source-follower converts the first bias voltage into the second bias voltage so that the second bias voltage tracks changes in the supply voltage.” The Tobita patent does not disclose these features and therefore cannot anticipate this claim 9 or any of its dependent claims.

Claims 10-19 recite features relating to the generation bias voltages (e.g., forward body bias) for a local functional block. The Tobita patent does not disclose generating bias signals of any type, but merely discloses generating a reference voltage which is clearly different from a bias

Serial No. 10/673,283

voltage as Figure 2 of Applicants' drawings makes clearly evident. It is therefore respectfully submitted that claims 10-19 are allowable, not only by virtue of their dependency from claim 9 but also based on the features separately recited therein.

Claim 20 recites "wherein generating includes adjusting the body bias to track changes in the supply voltage." The Tobita patent does not disclose these features. Moreover, claim 20 recites that the supply voltage derives from a local functional block, which is the same block being supplied the body bias. The Tobita patent discloses inputting a supply voltage into its reference voltage generating circuit, however Tobita does not disclose that output voltage from node 2 is input into the same circuit which generates supply voltage V_{cc} as required by claim 20.

Because Tobita does not disclose all the features of claim 20, it is respectfully submitted that the Tobita patent cannot anticipate this claim or any of its dependent claims.

Claims 21-24 are allowable, not only based on their dependency from claim 20 but also based on the converting steps recited in these claims which involve converting a first bias voltage into a second bias voltage based on the supply voltage variation. The Tobita patent not only fails to disclose generating bias voltages (it only discloses generating a reference voltage), it does not disclose performing a bias voltage conversion based on any variation of a supply voltage.

Claim 25 recites a local bias generator having features similar to those recited in claim 9. Accordingly, it is submitted that claim 25 and its dependent claims are allowable over Tobita.

In addition to these differences, claims 2, 3, 12, 13, 21, and 27 recite that the transistors in the source-follower stage are “**matched**” transistors. The Tobita patent does not disclose these features. These differences provide an additional basis for distinguishing claims 2, 3, 12, 13, 21, and 27.

Claim 31 recites that the supply voltage “is a supply voltage of the local functional block.” The Tobita does not disclose these features. Tobita merely discloses that a supply voltage is input into its reference voltage generating circuit. Tobita does not disclose any relationship between the supply voltage and any circuit which might receive the output voltage from node 2.

Claim 33 recites that the “source-follower continuously adjusts the body bias to track variations in the supply voltage.” The Tobita patent does not disclose these features.

Claim 34 recites that the “source-follower automatically shifts a level of the body bias to follow changes in the supply voltage of the local functional block.” The Tobita patent clearly does not disclose these features.

Claim 35 recites that the “source-follower shifts the level of the body bias based on the difference between the supply voltage and reference voltage.” (See pages 6-8 of the specification for support.) The Tobita patent does not disclose these features.

Claim 36 recites that the “first and second transistors have a same channel length and a same channel width.” The Tobita patent does not disclose these features.

Claim 37 recites that “the first and second transistors are both operated in saturation.” The Tobita patent does not disclose these features in combination with the features of claim 36.

Serial No. 10/673,283

Claim 38, 39, 41-44, and 46-48 recite features similar to those discussed above but depending from independent claims 9 and 20.

In view of the foregoing amendments and remarks, it is respectfully submitted that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,

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